

Translation

PATENT COOPERATION TREATY

PCT/JP2003/009705



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 103177-WO-00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/009705	International filing date (day/month/year) 30 July 2003 (30.07.2003)	Priority date (day/month/year) 13 August 2002 (13.08.2002)
International Patent Classification (IPC) or national classification and IPC C04B 35/581		
Applicant SUMITOMO ELECTRIC INDUSTRIES, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>28</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 15 December 2003 (15.12.2003)	Date of completion of this report 10 August 2004 (10.08.2004)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/009705

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1, 3, 14, 16, 17, 22-24, as originally filed
pages _____, filed with the demand
pages 4-13, 15, 18-21, 25(19.03.04), 2, 26-33, filed with the letter of 14 July 2004 (14.07.2004)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1, 23-33, filed with the letter of 14 July 2004 (14.07.2004)
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 2-22
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/09705

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1, 29-33	YES
	Claims	23-28	NO
Inventive step (IS)	Claims	1, 29-33	YES
	Claims	23-28	NO
Industrial applicability (IA)	Claims	1, 23-33	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP, 11-174875, A (SUMITOMO ELECTRIC INDUSTRIES, LTD.), 02 July 1999

Document 2: JP, 2002-68849, A (SUMITOMO ELECTRIC INDUSTRIES, LTD.), 08 March 2002

Document 3: JP, 1-282157, A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.), 14 November 1989

Claims 23-28

Comparing this application's invention to the ceramic heater (= cited invention) described in document 1 cited in the ISR, they differ with regard to setting numerical limits for the sintered compact substrate's "warping height (= flatness)."

Considering this, according to the description in this application's specification (page 4, lines 3-8; page 19, lines 8-14) the aforesaid flatness is a value suitable for screen printing an electrode on a substrate, and it appears that this can easily be accomplished by surface-polishing a thick sintered compact. This being the case, the cited invention too, manufactured by screen printing, can be understood as one that uses a substrate with about the same flatness.

Therefore this application's invention is substantially the same as the cited invention and is not novel and does not involve an inventive step.

Furthermore, "the magnitude of the polishing allowance" differs according to manufacturing process, not according to the manufactured object.

Claims 1, 29-33

Document 2 cited in the investigation report describes controlling bending by sintering a green sheet with surface area 100 cm^2 or more and thickness 1 mm or less on a boron nitride jig with thickness 2 mm or greater, and document 3 cited in the investigation report describes preventing warping of a large-size ceramic substrate by sintering a green sheet while it is housed in a tray-like jig formed with a recess.

Nevertheless, there are no publicly known documents that describe or suggest making the natural drying time after forming a sheet 10 hours or longer, or making the volume ratio of a compact to the sintering jig space 20~60%.

On the other hand, the present application's invention appears to produce a large-area substrate with excellent flatness in the sintered state by setting the drying time and volume ratio in the aforesaid ranges.

Therefore the present application's invention is novel and involves an inventive step.

From the INTERNATIONAL BUREAU

PCT

**NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

(PCT Rule 72.2)

To:

NAKANO, Minoru
c/o Sumitomo Electric Industries, Ltd.
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Osaka-shi, Osaka 554-0024
JAPON



Date of mailing (day/month/year) 17 February 2005 (17.02.2005)	
Applicant's or agent's file reference 103177-WO-00	IMPORTANT NOTIFICATION
International application No. PCT/JP2003/009705	International filing date (day/month/year) 30 July 2003 (30.07.2003)
Applicant SUMITOMO ELECTRIC INDUSTRIES, LTD. et al	

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

AZ, CA, CH, CN, CO, EP, GH, KG, KP, KR, MK, MZ, RO, RU, TM

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, BA, BB, BG, BR, BY, BZ, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, ES, FI, GB, GD, GE, GM, HR, HU, ID, IL, IN, IS, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, SC, SD, SE, SG, SK, SL, SY, TJ, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

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